

REMARKS

Claims 1-18 are pending in the present application. Claims 11-18 are canceled above. Claims 1-4 and 8 are amended above. No new matter is added by the claim amendments. Entry is respectfully requested.

Applicant affirms the election of Group I claims 1-10. Claims 11-18 are canceled above without prejudice to the filing of divisional or continuation applications.

Claims 2-4 stand rejected under 35 U.S.C. 112, second paragraph for reasons stated in the Office Action. The claims are amended above in a manner that is believed to address and overcome this rejection. In particular, claims 2-4 are amended to state a "first length (X1)", a "second length (X2) of conventional electrode lines", and a "third length (X3)", the meaning of each of which can be ascertained with reference to the present specification as filed at least at FIG. 4 and FIG. 5C and page 5, lines 25-28. Entry of the amendments and removal of the rejections are respectfully requested.

Claims 1-10 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Ejiri (U.S. Patent No. 6,770,974) in view of Applicant Admitted Prior Art (AAPA). Accordingly, reconsideration of the rejection and allowance of claims 1-10 are respectfully requested.

The present invention of amended independent claim 1 is directed to an electrode line structure of a semiconductor device comprising a semiconductor substrate and electrode lines on the semiconductor substrate. The electrode lines each have an inclined outer end in the long axis direction. The electrode lines each include a first line unit, a second line unit, and an insulating plug. The first line unit substantially functions as an electrode line. The second line unit includes the inclined outer end in the long axis direction and is separated from the first line unit by a predetermined distance. The insulating plug is interposed between the first line unit and the second line unit and electrically insulates the first line unit from the second line unit. An upper

surface of the second line unit is of uniform height above the substrate between the insulating plug and the inclined outer end.

In the present invention as claimed in amended independent claim 1, “an upper surface of the second line unit” is of “uniform height above the substrate between the insulating plug and the inclined outer end.” Further, the “second line unit” includes an “inclined outer end in the long axis direction.” These features are illustrated at least at FIGs. 4 and 5A- 5C of the present specification and the corresponding discussion. In this example, a conductive layer 105, a hard mask layer 110, and a photoresist pattern 115 are on a semiconductor substrate 100 (see FIG. 5A of the present specification). The photoresist pattern 115 is formed with an inclined end, described in this example as an inclined “sidewall”, due to photo-interference generated during the known photolithography process (see page 7, lines 17-22 of the present specification). The shape of the photoresist pattern is transferred to the underlying conductive layer 105 and hard mask layer 110 to form word lines 120 (see FIG. 5B and page 7, lines 23-24 of the present specification). A hole H divides each of the word lines 120 into a first line unit 120a and a second line unit 120b (see FIG. 5C and page 7, lines 30-31 of the present specification). Since the conductive layer 105 and hard mask 110 are on a semiconductor substrate 100, respectively, and are subsequently patterned using the photoresist pattern 115 as a mask to form word lines 120, it follows that the subsequently formed upper surface of the second line unit 120b has a “uniform height above the substrate between the insulating plug and the inclined outer end” (see FIG. 5C of the present specification).

In addition, since the photoresist pattern 115 has an inclined sidewall (see FIG. 5A), the shape of the subsequently formed second line unit 120b is modeled after the shape of the photoresist pattern 115, and therefore the sidewall, located at the outer end of the second line unit 120b of the word lines 120, is also inclined (see FIG. 5C and page 7, lines 24-26 of the present specification).

Ejiri teaches the formation of a capacitance element (see Ejiri, FIG. 13 and column 21, lines 23-25). A polysilicon dummy layer 34 is formed on a portion of a semiconductor substrate 10 through a first insulation film 12 (see Ejiri, FIG. 14 and column 21, lines 63-67). The polysilicon dummy layer 34 is formed for making a difference in level in the region in which the capacitance element is formed (see Ejiri, column 13, line 67 to column 14, line 2). A second insulation film 16 is formed on the first insulation film (see Ejiri, FIG. 15 and column 22, lines 6-10). A dummy electrode 18c is formed on a second portion of the second insulation film 16 formed on the polysilicon dummy layer 34 (see Ejiri, FIG. 16 and column 22, lines 31-34). In this manner, the dummy electrode 18c has a top surface that is higher than the surface of the lower electrode 18b (see Ejiri, FIG. 16 and column 22, lines 44-47). However, since Ejiri teaches a dummy electrode 18c formed on a polysilicon dummy layer 34 that has a difference in level, it follows that Ejiri does not teach or suggest “an upper surface of the second line unit being of uniform height above the substrate between the insulating plug and the inclined outer end” (emphasis added), as claimed in amended independent claim 1. Nor does AAPA teach or suggest this feature since AAPA does not include such a “second line unit.”

Further, it is submitted that Ejiri fails to teach or suggest a “a second line unit, which includes the inclined outer end in the long axis direction,” as claimed in amended independent claim 1. Instead, Ejiri teaches a dummy electrode 18c, referred to in the Office Action at page 3 as a “second line unit”, that surrounds the area forming the capacitive element over the polysilicon dummy layer 34 (see Ejiri, FIG. 13 and column 22, lines 31-34). The raised surface of Ejiri, including the inclined area, is at an intermediate location of the dummy electrode, and therefore is not at an “outer end” of the electrode, as claimed in amended independent claim 1.

Accordingly, it is submitted that the combination of Ejiri and AAPA fails to teach or suggest the invention set forth in independent claim 1. Reconsideration and removal of the rejection and allowance of amended independent claim 1 are therefore respectfully requested. With regard to the various dependent claims, it follows that these claims should inherit the allowability of the independent claims from which they depend.

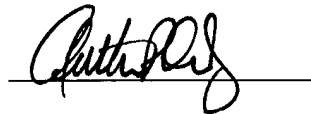
Closing Remarks

It is submitted that all claims are in condition for allowance, and such allowance is respectfully requested. If prosecution of the application can be expedited by a telephone conference, the Examiner is invited to call the undersigned at the number given below.

Respectfully submitted,

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